Report on the TICER Summer School (26th to 30th July 2010)

This was the 15th Ticer Summer School. This year's five-day event was hosted by Tilburg University at Eindhoven in The Netherlands. There were approximately 60 delegates (though the numbers varied from day to day) from special, academic and public libraries in Western Europe, North America, the Middle East and Indian subcontinent. The days were long and intense, beginning at 08:45 and ending at 17:45 – though the discussions carried on throughout dinner and usually ended around 20:30. Each day was devoted to a different key theme and as such constituted a module:

- Module 1: Strategic Development and Library Management
- Module 2: The Library in the Scholar's Workflow and Research Data
- Module 3: Libraries - Partners in Teaching and Learning
- Module 4: Mobile Technologies in Education and Library
- Module 5: Web 2.0 and Linked Data in Libraries

The following provides a flavour from a selection over twenty presentations given at the Summer School. I have focused on the presentations that engage with questions about the future of libraries and the challenges that we face as a profession.

The keynote speaker for Ticer 2010 was Professor Stefan Gradmann from the School of Library & Information Sciences at Humboldt University in Berlin. His paper was entitled "Semantic Libraries: The Container, the Content and the Contenders". The presentation of the paper is available on Slideshare at: http://www.slideshare.net/gradmans/20100726-tilburg-semanticlibraries

Professor Gradmann's work on semantic libraries has been ground breaking. Gradmann explained that whilst we have focused on information containers, i.e. books, journals, and links to such information containers in our metadata catalogues, the semantic web/library would enhance the meaning, facilitate automatic discovery, link semantically to related articles, provide access to data within the article (for authentication and reuse) and/or facilitate integration of data between articles, i.e. find relationships. Gradmann's lecture took the "a la carte" theme to the letter and his lecture was divided into a hors d'oeuvres, a main course and a dessert. He looked at the basics of library functionality in the first part of his talk (the hors d'oeuvres), gave an interesting summary of where we are going in terms of semantic digital libraries (his main course) and who else is going there with us, i.e. the partners we need to work with and the contenders we will need to appease (the dessert).

According to Gradmann, today we work with metadata catalogues and we spend the majority of our time mediating access to information objects i.e. books, pdfs, webpages, images, etc. via web links. In this case, the information object is in information containers and we are not so bothered about the content in these containers (i.e. concepts, graphs, data, images etc in the book, the article content, data, images, etc). The semantic web, on the other hand, is more concerned about the content in these containers. This is because the nature of research has changed significantly and developments and eScience and eScholarship in the constantly changing electronic landscape have created unpredictable research workflows. The collaborative and multidisciplinary aspect of eResearch/eScience has enabled the re-use of data. This creates many more layers of information. Gradmann stressed that computers are better equipped to log the workflow within research networks. The resulting metadata created by researchers/subject experts will describe associations and relationships between the different

datasets and digital objects that are created such that methodologies, analysis and results for each and every use and re-use of the data will be logged. This will allow for more detail to be generated about the content in the container. (These concepts were discussed at length in the second module on EScholarship and eResearch).

The reality of this was demonstrated by Herbert Van de Sompel in the final module of the week, Web 2.0 and Linked Data in Libraries. Gradmann anticipated Van de Sompel's contribution, referring to the latter's work on the Europeana project [http://www.europeana.eu/] in his presentation and the Open Archives Initiative (OAI). Librarian and computer scientist Herbert Van de Sompel (best known as the developer of SFX, the OAI and standards such as the Open URL, Object Reuse and Exchange and the OAI Protocol for Metadata Harvesting) presented a paper on "Linked Data" and "Annotating the Scholarly Web". He succeeded in taking Gradmann's theoretical paper and demonstrating the creation of metadata in the semantic web in practical terms. Van de Sompel demonstrated how the semantic web would be built beginning with a book and its bibliographic component parts. He then added a translation of the book and other books by the author and finally the narrative, the relationships between this and other stories by the same author etc. etc. – taking it further and further each time. The key message that came across is that the buildup of associations, relationships and concepts that begin to emerge from this way of linking requires a specialist who understands the subject to create useful metadata detailed enough to allow meaning so that different components begin to make sense - this is the beginning of the semantic web.

Module 2: The Library in the Scholar's Workflow and Research Data

In her talk "From Papers to Research Objects: New Units of Scholarly Knowledge Exchange", Carole Goble, Professor in Computer Science at the University of Manchester gave the example of several software platforms that have analysed the scholar's/researcher's workflow and enabled the linking of datasets, methodologies, concepts, authors (as reviewers, collaborators and researchers) in biomedical sciences (this field of study that has made the most progress in terms of eResearch and eScholarship). These include myExperiment, SysMO-DB, BioCatalogue and MethodBox. Goble who had two bibliometricians working on several projects is now undergoing a funding crisis and is, as a consequence of this, letting go of the bibliometricians because she feels that the researcher/scholar can create the metadata just as well as the bibliometrician and maybe better suited to the task as they are already part of the workflow process. So, once again, the need for the librarian in eResearch is diminishing - unless librarians can utilise their subject expertise and use their skills to generate the metadata required to link not just the datasets, research methodologies to the use and re-use of data but also the other scholarly assets used, e.g. the data interpretation tools, models and software that support the operating procedures and research protocols. Further, the issue of referencing and attribution in eScholarship was discussed at length. How does one give credit, log new publication cycles, and curate data to ensure the above so that the scholarly discourse is correctly articulated? All of the above poses immense challenges for our profession. And can we rise to these challenges? Do librarians need to be re-trained, do library schools need to revisit their curriculum in order to prepare new librarians for the challenges ahead? To my mind, this is not impossible and harks back in many ways to what librarians used to do –indexing.

Libraries and archives have a fundamental role to play in supporting digital scholarship, in understanding the collaborative nature of this scholarship and redefining the scholarly publications which emit from the research cycles and the associated digital commodities. We will certainly need to re-think the library systems we operate, the research repositories we build and the metadata that we create. We need to embed ourselves in the research process so that we can log, curate and correctly articulate the scholarship as it unfolds. To do this, we need to be

firmly embedded into the Schools/Faculties which we support.

The directions in which the themes of the second day went more or less confirmed the worry that I had – if the profession was to survive, then librarians are going to have to do more not only in supporting the research process but actually being part of the research process. This was emphasised again in the paper presented by Dr. Tony Hey, Corporate Vice President of External Research at Microsoft - and he should know as his wife is a librarian. Dr. Hey's paper entitled "A Revolution in Digital Scholarship and its implications for Research Libraries" talks about a "fourth paradigm" for scientific research – a paradigm of data-intensive scientific discovery. The 'data deluge' is beginning to affect many fields of science as simulations are now the norm and they generate vast amounts of data. Hey gave plenty of examples of how data sets are generated in eScience or eResearch and how new tools and technologies are being used to support data-intensive, collaborative and often multidisciplinary research. For example, biology, astronomy, particle physics, oceanography and environmental science use such tools/technologies as gene sequencing, high-resolution sky and satellite surveys and senor networks and simulations to generate data. The implications of needing to make choices about what data needs to be preserved in order to create a valid record of research is only now beginning to emerge. (Some of this was discussed at the 'Innovations in Reference Management Workshop, hosted by The Open University, which I attended in June this year). The message seemed clear: librarians need to provide expertise – in terms of curation, archiving and referencing of data. Tony Hey's edited book on The Fourth Paradigm: Data-Intensive Scientific Discovery (published by Microsoft in 2009) is available at: http://research.microsoft.com/en-us/collaboration/fourthparadigm

Andrew Teloar, Director of Technology at the Australian National Data Service, also spoke of the "Importance of Data and the Implications for Research Services" and how we need to be better prepared to deal with the move to a new data-intensive model of research in the sciences (and increasingly in the humanities and the social sciences). Libraries and archives must play a greater role in supporting scholarly digital commodities including the redefinition of what is a scholarly publication. Libraries need to extend services beyond merely ensuring the provision of full text articles from within a digital library.

Module 1: Strategic Development and Library Management

The theme of Return On Investment (ROI) was explored by two librarians – Torill Redse, a Senior Consultant from the Norwegian Archive, Library and Museum Authority and Paula Kaufmann who is the Dean of Libraries and University Librarian at the University of Illinois at Urbana-Champaign in the USA. Both speakers highlighted the fact that whilst the word 'library' is not often mentioned in the institution strategy or plan even though it is often at the centre for student learning and academic research. The focus of both papers was on the tools required to gauge impact of services and facilities on learning. Collating statistics on the number of volumes held, items purchases, circulation data, articles downloaded did not give an indication of value / impact of the service. Was there a formula that could be used to gauge 'Return on Investment' or ROI? Paula T. Kaufman explained how the University of Illinois came up with a formula (with the backing of Elsevier) on the impact of the library on the number of grants/research funding obtained by the University. The full article on which this presentation was based is available at: http://liber.library.uu.nl/publish/articles/000269/article.pdf

Also of note on Module 1 was an OCLC-commissioned paper in 2009 on the different research assessment regimes used in five countries and the role of libraries in the research assessment process. John MacColl, the European Director, Research Libraries Group from OCLC Program

& Research presented the paper which summarised the key findings and what constitutes best practice in developing new library services and roles to support research excellence. The report's premise is that librarians have the skills and experience to make valuable contributions to their institutions research assessment responses and library administrators should enable collaborative relationships between the librarians and the research office so that librarians are fully integrated into the research process from grant bidding to research output. If libraries are fully embedded into the research assessment, not only does their operational role grow but librarians begin to play a greater role in the planning process which in turn reinforces the central position of the library within the institution. For instance, the library is best placed to ensure the visibility of bibliometrics within the institutional research repository – a measure suggested by the Research Excellence Framework (REF) in the UK. The role of the library thus becomes more central and meaningful. The OCLC report is available online at: http://www.oclc.org/research/publications/library/2009/2009-09.pdf

Module 3 which focussed on Teaching and Learning did not have any surprises. One of the few new ideas mentioned was a 'speed-dating' proposal for librarians to meet their faculty by Steward Ross, director for Excellence in Teaching and Learning at Minnesota State University. This is perhaps not such a corny idea and could perhaps be something to consider for us at Middlesex University, especially at new staff inductions? It is interesting to note that librarians in the states and in Canada have academic status and many are in tenured positions (and expected to conduct research and to publish). This makes it easier for them to integrate into the academic community.

Module 4 on Mobile Technologies in Education and Library had some interesting presentations starting with Kirsten Purcell of the Pew Internet & American Life Project discussing the findings of a survey on the use of mobile devices by the public in America and how the mobile devices have turned information into a social experience. The message that most users would be accessing information through mobile devices came through loud and clear, as did the importance for libraries and librarians to both embrace mobile technologies by providing services and information from mobile platforms and to use social networking (Twitter and Facebook) to engage with users.

The presentation by Adam Blackwood of JISC that followed, was both informative and entertaining (in that Blackwood not only spoke about the various mobile devices but demonstrated their use in FE College libraries). He also talked about the use of QR codes, Bluetooth, social networking and Augmented Reality. (Augmented Reality was also the theme of a paper presented by Wim De Waele's co-researcher Nico Verplancke on the last day. In this presentation Verplancke looked at the how we need to look at designing libraries that will be relevant to future generations and libraries should be taking advantage of technology than simply learning to cope with it. His presentation is available at: http://www.tilburguniversity.nl/ticer/2010/result/verplancke.pdf). The key message from Blackwood is that all staff working in information services should familiarise themselves with mobile devices and become aware of the possibilities of providing a service using this platform. His advice to information managers is to ensure that all staff are fully aware of the possibilities that mobile devices provide in the information landscape and that every Director should make sure that their staff have smart phones! Adam Blackwood is happy to come to Middlesex and present his paper to the Academic Support Team (and perhaps the IT Team too) and I am happy to organise such an event.

Tito Sierra (whose name sounds like something from the Wild West of Texas!), from the University of North Carolina State University gave a case study on NCSU's creation of a mobile

site. The mobile site is available at: m.lib.ncsu.edu/home (I downloaded the mobile site to view as Sierra talked through the various information portals available). The site is neat with colourful images which give library location & hours, computer availability, search, ask us, room reservations, groupfinder (for students who want to revise/work with other students), news & events, webcams (to watch online in real time the queues at the coffee counter or the desk), course reserves (short loan collections) and access to the full NCSU mobile website. The decision for NCSU to move to a mobile platform was influenced by the 2010 Horizon report (available at: www.nmc.org/pdf/2010-Horizon-Report.pdf)

Dr. Rudolf Mumenthaler, a historian but now Head of Innovation & Marketing at the Swiss Federal Institute of Technology Library in Zürich spoke at length about the different e-book platforms available on the market and the impact of these on libraries. The EDUCASE Report (2010) on EBook Readers is worth reading to gauge the longer term impact of e-readers (see: http://net.educase.edu/ir/library/pdf/ELI7058.pdf). Dr. Mumenthaler's presentation enabled us, the audience, to see and feel the different eReaders available on the market. Having used an iPAD, I found the Sony Kindle really antiquated and did not know what to do with the many buttons! Mumenthaler also talked about the various software available on the readers. His full presentation is available at: http://www.slideshare.net/ruedi.mumenthaler/rudolf-mumenthaler-ereaders-and

In summary, TICER 2010 highlighted the enormous challenges ahead for us (libraries and librarians). We must take stock of the implications of new technologies, especially mobile technologies and also the developments in eScholarship and the semantic web and strategically plan our services and collections so that they meet the needs of the future researcher. For too long, our emphasis has been on the undergraduate student and on the information literacy requirements of these students. Although we cannot abandon the UG student and IL (which will continue to be an issue as the web becomes part of the teaching and learning landscape and because we have a large cohort of international students), librarians need to work more closely with the researchers in their Schools and to become part of the research team. My experience of working on the two JISC-funded projects enabled me to get to know my research team and made me realise that we have a valuable role to play right from the bidding process through to the publication process. We also need to ensure that we are fully trained in understanding the research process methodology, technology and data analysis and we are embedded into the researcher's workflow in the institution. Further, the institution research repository needs to become much more integrated into this workflow and should include data – even if the links are made to external data repositories.

This report touches on the key issues but there is much, much more detail associated with each presentation. I would be happy to elaborate any of the modules/presentations if this is required. The TICER 2010 website has the full programme, including a reading list (which was published before the course and which I benefitted from) and some of the presentations at: http://www.tilburguniversity.nl/ticer/2010/program.html

I want to end by saying how immensely grateful I am to the EIS Executive for enabling my participation at the TICER Summer School 2010. The insight given by the top people in the industry (Professor Stefan Gradmann, Professor Tony Hey etc) on the future of the profession has been of immense value in terms of my professional development. On a personal level, since leaving TICER, I have many more contacts on Linkedin, friends on Facebook and followers on Twitter and am now part of a professional network made up of interesting individuals based in Europe and the US. I was keen that the librarians at home (MDX and the other UK librarians)

who follow me on Twitter and Facebook were kept informed on the discussions at TICER that I tweeted at almost every session using the #Ticer2010 hashtag. (I was pleased to have an acknowledgement from some UK librarians on the usefulness of the tweets and the many re-tweets that followed wereequally encouraging). The archive of tweets (with many useful URLs) is available at: http://bit.ly/TICER2010.

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